
LD 135: Core Common Equipment Diagnostic

LD 135 provides diagnostic and maintenance information for Option 11C/51C/61C/81/81C machines with X11 Release 18 and later. It provides a means of performing the following functions:

- clearing minor and major alarms
- clearing and printing maintenance display contents for the primary Core
- testing the idle Core
- displaying CP card status and ID
- enabling and disabling CNI cards
- displaying CNI card ID and status
- testing SIMMs, inactive CNIs, and standby Core during daily routines
- switch Cores when in redundant mode
- during midnight routines checks primary CNIs, checks for Core redundancy, and attempts to switch Cores

When a status appears disabled, one or more Out-of-Service (OOS) messages may appear. Listed below are the possible OOS messages. (What actually appears are the numbers associated with the OOS text).

Possible OOS Messages

- 0 = CP local bus parity threshold exceeded
- 1 = CP card HPM timeout threshold exceeded
- 8 = Unconfigured CNI card.
- 9 = Port has been disabled by craftsman.
- 10 = Device is not accessible.
- 16 = CNI to 3PE cable 1 on specified card and port lost.
- 17 = CNI to 3PE cable 2 on specified card and port lost.
- 18 = 3PE power lost.
- 19 = 3PE has been manually disabled.
- 20 = CNI card has been manually disabled.
- 21 = Card test failed.
- 22 = Port test failed.
- 23 = Extender disabled by Meridian 1 initialization.
- 24 = Port interrupt line 0 disabled.
- 25 = Port interrupt line 1 disabled.
- 26 = Port interrupt line 2 disabled.
- 27 = Port interrupt line 3 disabled.

Adding a group to an option 51C/61C/81/81C

It may be necessary to add a group, or groups, to your system after original installation. Refer to the *System installation NTP* for cabling and general installation information. Follow these steps to configure the new groups in the software.

- 1 Be sure to connect the cables from the network shelf to the active and standby IPB CNI card slots. Each CNI card has 2 ports and can support 2 groups.
- 2 Load Overlay 135 and disable the standby port connect to the new group. Switch Cores, then disable the standby port again (was the active one).

LD 135

DIS CNI c s p Disable the standby core CNI port
SCPU Switch Cores If asked for FORCE, enter Yes.
DIS CNI c s p Disable the standby core CNI port

- 3 Load Overlay 17 and configure the active and standby EXT for each new group.
- 4 Load Overlay 135 and enable the standby CNI port. Switch Cores and enable the standby again (was the active). Switch Cores again.

LD 135

ENL CNI c s p Enable the standby core CNI port
SCPU Switch Cores If asked for FORCE, enter Yes.
ENL CNI c s p Enable the standby CNI port
SCPU Switch Cores If asked for FORCE, enter Yes.

- 5 Load Overlay 43 and datadump to save the new configuration.
- 6 Load Overlay 135 and perform some system integrity checks. Switch the Cores, and test the CNI ports.

LD 135

ENL CNI c s p Enable the standby CNI port
SCPU Switch Cores If asked for FORCE, enter Yes.
ENL CNI c s p Enable the standby CNI port
SCPU Switch Cores If asked for FORCE, enter Yes.

Removing a group from an option 51C/61C/81/81C

It may be necessary to remove a group, or groups, from your system after original installation. Refer to the *System installation* NTP for cabling and general installation information. Follow these steps to remove the groups from the software.

- 1 Disable any peripheral or network devices connected to the groups being removed.
- 2 Load Overlay 135 and disable the standby port connect to the new group. Switch Cores, then disable the standby port again (was the active one).

LD 135

DIS CNI c s p	Disable the standby CNI port
SCPU	Switch Cores If asked for FORCE, enter Yes.
DIS CNI c s p	Disable the standby CNI port

- 3 Load Overlay 17 and remove (OUT) the active and standby EXT for removed group.
 - 4 Load Overlay 43 and datadump to save the new configuration.
-

Basic Commands

CDSP	Clear maintenance displays.
CMAJ	Clear major alarm, and reset power fail transfer.
CMIN	Clear the minor lamp on a system basis
CMIN ALL	Clear minor alarm indication on all attendant consoles
CMIN c	Clear minor alarm indication on attendant consoles for customer c (not applicable for Release 22)
DIS CNI c s p	Disable the CNI port.
DSPL	Get contents of maintenance display for the active Core.
DSPL ALL	Get contents of maintenance display for the active Core as well as previous 63 displays.
ENL CNI c s p	Enable CNI port.
IDC CNI s	Print the card ID for the CNI on the active side.
IDC CPU	Print card ID for the active Core.
MIDN	Run midnight routines after LD 135 is aborted and TTY is logged out.
SCPU	Switch Cores.
SHDW	Restore redundancy to a system put in single mode by the SPLIT command.
SPLIT	Put a redundant (shadowed) system into single (non-shadowed) mode.
STAT CNI c s p	Get the status of all configured CNIs. (Also prints the Network Group number of both ports on each CNI.)
STAT CPU	Get the status and core numbers for both CPs.
STAT MEM c m	Get status of SIMMs on both CPs.
TEST CNI c s p	Test the CNI port.
TEST CPU	Test the inactive (standby) Core. This command performs NO tests upon the active (primary) Core.
TEST IPB	Test the backplane protocol on the secondary (inactive) Interprocessor Bus. This command does NOT test the primary (active) IPB.
TEST LCD	Test the LCD display on the active CP card.

Option 11C commands

DIS FIL n	Disable fibre optic link n
ENL FIL n	Enable fibre optic link n
LLBK FIL n	Perform local loop back test on fibre optic link n
RLBK FIL n	Perform remote loop back test on fibre optic link n
STAT FIL	Get status of all fibre optic links
STAT FIL n	Get status of fibre optic link n

Alphabetical list of commands

Command	Description	Pack/Rel
CDSP	Clear maintenance displays. This command sets the maintenance display for the primary CP to blank.	basic-18
CMAJ	Clear major alarm, and reset power fail transfer.	basic-18
CMIN	Clear the minor lamp on a system basis.	alarm_filter-22
CMIN ALL	Clear minor alarm indication on all attendant consoles.	basic-18
CMIN c	Clear minor alarm indication on attendant consoles for customer c. (not applicable for Release 22)	basic-18
DIS CNI c s p	Disable the CNI port. Where: • c = Core number (0 or 1) This must be the standby side. Disable the active side if the CNI is not in service. • s = Slot number (8-12) • p = Port number (0 or 1) If the P is not entered, both ports, and the card itself are disabled.	basic-18
DIS FIL n	Disable fibre optic link n	opt11c-22
DSPL	Get contents of maintenance display for the active Core. If the maintenance display is blank, BLANK is output.	basic-18
DSPL ALL	Get contents of maintenance display for the active Core, and previous 63 displays.	basic-18
ENL CNI c s p	Enable CNI port. Where: c = Core number (0 or 1) ; s = Slot number (8-12) ; p = Port number (0 or 1) If the P is not entered, both ports, and the card itself are enabled. A port cannot be enabled if the card is disabled. Enabling the CNI card will also enable the 3 Port Extender.	basic-18
ENL FIL n	Enable fibre optic link n	opt11c-22

LD 135

IDC CNI s Print the card ID for the CNI on the active side. Where: s = Slot number (8-12). The printout appears in the following format: basic-18

x y pppppppppaa rrssss cccccc

Where:

- x = Core number (0 or 1)
- y = Slot number (8-12)
- ppppppppp = PEC code
- aa = Attribute code
- rr = Release number
- ssss = Serial number
- cccccc = Comments (optional)

IDC CPU Print card ID for the active Core. The printout appears in the following format: basic-18

x y ppppppppppp rrssss cccccc

Where:

- x = Core number (0 or 1)
- y = Slot number (8-12)
- ppppppppppp = PEC code
- rr = Release number
- ssss = Serial number
- cccccc = Comments (optional)

LLBK FIL n Perform local loop back test on fibre optic link n (link must be disabled) opt11c-22

MIDN Run midnight routines after LD 135 is aborted and TTY is logged out. basic-18

RLBK FIL n Perform remote loop back test on fibre optic link n (link must be disabled) opt11c-22

SCPU	Switch Cores. This command causes the inactive CP to become active. If the switchover is successful, OK is printed. If it is not successful, an error message is printed. If, when attempting to switch CPs, the system determines the currently active side is better than the standby side, a message appears on the TTY: "FORCE Enter <YES> to force SCPU to standby Core x. Press <Return> to abort SCPU." Entering Yes continues the switch. Entering a Carriage Return <CR> defaults to No and retains the currently active side.	basic-18
SHDW	Restore redundancy to a system put in single mode by the SPLIT command. This command cannot be used unless the system is already SPLIT. This command MUST be entered by the CPIO port on the secondary CP. SHDW puts the secondary CP to "sleep." Once the secondary CP is asleep, the primary CP begins the process of updating the secondary CP's memories so they match the primary CPs. SHDW does NOT synchronize the contents of the CMDUs. Use LD 137 to synchronize the CMDUs. When implementing this command, the following is output: WARNING: CP x will be put to SLEEP. Enter <YES> to continue, or press <return> to abort.	basic-18
SPLIT	Put a redundant (shadowed) system into single (non-shadowed) mode. The active Core remains active. Use this command for parallel reload, and for diagnostics requiring split mode operation. Additionally, the standby (inactive) Core "wakes up" and does a system level INIT. When the command is successful, OK is printed. If it is not successful, an error message is printed.	basic-18

This command has the same effect as putting both Cores into MAINT.

If a terminal is connected to the secondary Core's CPIO port, OS level startup messages appear as well as INI messages. This is not an error, and is operating according to design.

If the disks are not synchronized, the command aborts, and an error message appears.

STAT CNI c s p Get the status of all configured CNIs. (This command also prints the Network Group number of both ports on each CNI.) basic-18

To get the status of a specific CNI port, enter the following information. Entering only STAT CNI gets the status for all CNI ports.

Where: c = Core number (0 or 1) ; s = Slot number (8-12) ;
p = Port number (0 or 1).

If the P is not entered, the status of both ports is printed.

If the status is DSBL (Disabled), one or more of the OOS reasons may appear. What actually appears are the numbers associated with the OOS text.

- 0 = CP local bus parity threshold exceeded
- 1 = CP card HPM timeout threshold exceeded
- 8 = Unconfigured CNI card
- 9 = Port has been disabled by craftsperson
- 10 = Device is not accessible
- 16 = CNI to 3PE cable 1 on specified card and port lost
- 17 = CNI to 3PE cable 2 on specified card and port lost
- 18 = 3PE power lost
- 19 = 3PE has been manually disabled
- 20 = CNI card has been manually disabled
- 21 = Card test failed
- 22 = Port test failed
- 23 = Extender disabled by Meridian 1 initialization
- 24 = Port interrupt line 0 disabled
- 25 = Port interrupt line 1 disabled
- 26 = Port interrupt line 2 disabled

STAT CPU	Get the status and core numbers for both CPs. Possible responses are: • ENBL = CP is running • IDLE = CP is in standby • DSBL = CP is disabled If the status is DSBL, one of the following OOS reasons is printed: • 0 = CP card local bus parity threshold exceeded • 1 = CP card sanity timeout threshold exceeded • 10 = Secondary CP is not accessible • 16 = Secondary CP has a major fault This command also prints out the results of the latest self-test, and the position of the MAINT/NORM switch.	basic-18
STAT FIL	Get status of all fibre optic links. Link status may be ENBL (enabled), DSBL (disabled), LLBK (local loop back mode) or RLBK (remote loop back mode)	opt11c-22
STAT FIL n	Get status of fibre optic link n Where : n = 1 (first expansion cabinet) or n = 2 (second expansion cabinet)	opt11c-22
STAT MEM c m	Get status of SIMMs on both CPs. To get the status of a single SIMM, or a specific side, enter the following information. Where: • c = Core (0 or 1) • m = SIMM number (0-5) If m is not entered, status for all SIMMs is printed. If the status is Disabled (DSBL), the device is not accessible	basic-18

TEST CNI c s p	Test the CNI port. Where: • c = Core number (0 or 1) • s = Slot number (8-12) • p = Port number (0 or 1) If the P is not entered, both ports are tested. This command can test Standby CNIs as well as active CNIs that are out of service. This may take a few minutes because of the time required to reestablish memory shadowing and contents. When the command is successful, OK is printed. If it is not successful, an error message is printed.	basic-18
TEST CPU	Test the inactive (standby) Core. This command performs NO tests upon the active (primary) Core. The CMB (on the CP card), CP to CP cable, and memory are sure that Split mode can be entered safely. Then the CP is tested. The system enters split mode, runs the test, and returns to redundancy (memory shadowing). This may take a few minutes because of the time required to reestablish memory shadowing and contents. It is possible, during the test, that service may be interrupted if an error occurs on the single active Core. Output from this test is "OK," or a CCED message. Refer to the specific message for more information. Testing the secondary (inactive) Core is done by performing a "reset" on the secondary Core. If a terminal is connected to the secondary Core's CPIO, cold start diagnostics are displayed on the terminal. This is not an error, and is operating according to design.	basic-18
TEST IPB	Test the backplane protocol on the secondary (inactive) Interprocessor Bus. This command does NOT test the primary (active) IPB. The system enters split mode, runs the test, and returns to redundancy (memory shadowing). When the command is successful, OK is printed. If it is not successful, an error message is printed.	basic-18

This may take a few minutes because of the time required to reestablish memory shadowing and contents. It is possible, during the test, that service may be interrupted if an error occurs on the single active Core.

TEST LCD Test the LCD display on the active CP card. The following test pattern is displayed on the active CP card's display: basic-18

- 8888888888888888
- 8888888888888888
- ABCDEFGHIJKLMNOP
- QRSTUVWXYZ123456
- abcdefghijklmnop
- qrstuvwxyz012345

The first two tests go by very quickly, so you may actually see only the third one.
